Forecast Data for Analytical Tooling - v3 - r2

Domain Portfolio: Forecast | Domain: Analytical | Usage Classification: **Limited Availability**

Geography: **Request by Postal Key:** Australia, Austria, Canada, France, Germany, Great Britain, Italy, Japan, Norway, Switzerland, CONUS

Request by Geocode: Global 4K resolution

Attribution Required: No

Attribution Requirements: N/A

Overview

The Forecast Data for Analytical Tooling API provides aggregated forecast data for use by Data Science teams in performing Predictive Analytics.

Note:

The legacy version of this product can be found here: https://ibm.co/v3rFDfAT

HTTP Headers and Data Lifetime - Caching and Expiration

For details on appropriate header values as well as caching and expiration definitions, please see **The Weather Company Data | API Common Usage Guide**.

Details

Predictive models are often trained using the historical counterpart of this API, Historical Data for Analytical Tooling. The data provided by this API consists of the Average, Max and Min values, for each of 7 daily "periods" (expressed in local time relative to the postalKey supplied in the call), for each of 11 weather aspects ("products"), for each day in the hourly forecast data at the time of the call.

More specifically, the forecast data used to compose the aggregations returned by the API is 15 days x 24 hours = 360 hours forward from the moment the call is made. Since 31 hours of data are required to generate the aggregations for any one day (00 hour of that day through and including the 06 hour of the next day), some hourly forecast data at the beginning and/or end of the forecast (where insufficient hourly forecast data is present) may be disregarded. Aggregations will only be provided for days that have sufficient data to do so. See Appendix A: Daily Aggregation Periods for a visualization of these aggregations and the daily periods over which they occur.

The CSV response is formatted such that the first row of data defines the columns for all subsequent values. It is up to the client to determine how to handle entries for which there was no data (e.g. if not all weather products were selected). See: Appendix B: CSV Sample and Appendix C: CSV Column Titles.

The products endpoint can be used to discover valid values for the productId parameter to the data endpoint. Note that the (case-insensitive) word "all" can be used to include all available products in the response.

For periods where there is no data, the data will be represented by an empty field. For averaged time periods, the average is derived from the hourly samples that are collected and does not include periods where there no data is collected. For more, see: Quick Reference and Best Practices.

URL Construction

Atomic API URL Examples:
Data Request by Postal Key: Required Parameters: postalKey, productId, language, units, format, apiKey
https://api.weather.com/v3/wx/forecast/analytical/r2?**postalKey=81657:US&productId=Temperature**&language=en-US&units=s&**format=csv&apiKey=yourApiKey**
Data Request by Geocode: Required Parameters: geocode, productId, language, units, format, apiKey
https://api.weather.com/v3/wx/forecast/analytical/r2?**geocode=42.0,-89.5&productId=Temperature**&language=en-US&units=s&**format=csv&apiKey=yourApiKey**
Product Discovery: Required Parameters: apiKey
https://api.weather.com/v3/wx/forecast/analytical/r2/products?**apiKey=yourApiKey**

Valid Parameter Definitions

Parameter Name	Valid Parameter Value	Description
geocode	ex: 42.0,-89.5	The GPS coordinates (or the latitude and longitude) of a physical address
postalKey	ex: 81657:US	Colon-delimited Postal code and Country Code combination
productId	Dewpoint, FeelsLike, Gust, MSLP, PrecipAmount, RelativeHumidity, SnowAmount, Temperature, UVIndex, Visibility, WindSpeed	Weather aspect for which aggregate values are to be retrieved. Can be individual (single) product, comma delimited list of multiple products, or the (case-insensitive) word “all” to get them all. Derived from /products endpoint
language	en-US	Only en-US supported at this time
units	e (Imperial/English), m (Metric), s (SI: Système international d'unités)	The unit system in which numerical values should be expressed
format	csv, json	Output format. csv is valid for the /analytical endpoint and json is valid for the /products endpoint

Unit Systems for the weather variables provided by FDAT (which comes from FOD) and comparable HDAT SI units

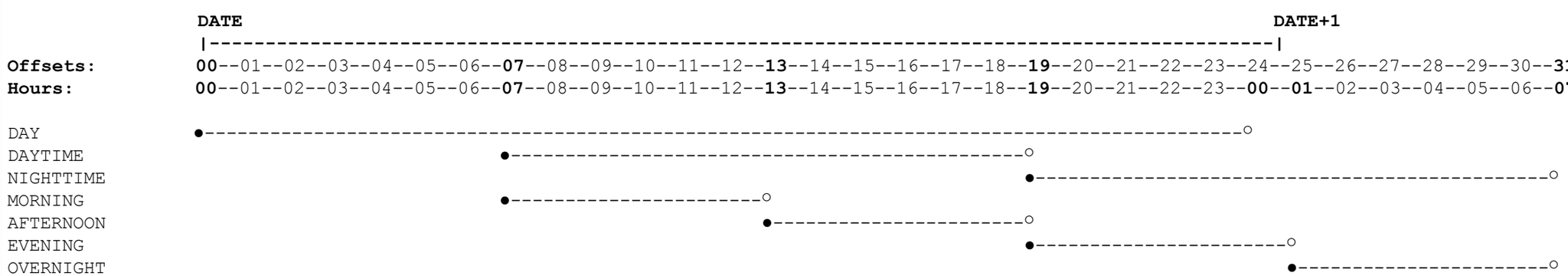
Variable	SI	Metric	English/ Imperial	Comparable HDAT SI unit
Dewpoint	K	℃	℉	K
FeelsLike	K	℃	℉	K
Gust	m/s	km/h	mph	m/s
MSLP	mbar	mbar	Hg	Pa
PrecipAmount	mm	mm	in	mm
RelativeHumidity	%	%	%	%
SnowAmount	cm	cm	in	m
Temperature	K	℃	℉	K
UVIndex	enum	enum	enum	enum
Visibility	km	km	mi	m
WindSpeed	m/s	km/h	mph	m/s

Note on UV Index: values range -2 to 16.

```
-2    Not Available
-1    No Report
0-2   minimal
3-4   low
5-6   moderate
7-9   high
10+   very high
```

Appendix A: Daily Aggregation Periods

"DATE" = DATE the aggregations are referred to as being created for
Below is a depiction of the semantics that both Historical and Forecast Aggregations will use when considering the time ranges for that **"DATE"**



Appendix B: CSV Sample

All numerical data are decimal numbers.

date	postalKey	latitude	longitude	DewpointLocal DayAvg	DewpointLocal DayMax	DewpointLocal DayMin	DewpointLocal DaytimeAvg	DewpointLocal DaytimeMax	DewpointLocal DaytimeMin	DewpointLocal NighttimeAvg	DewpointLocal NighttimeMax	DewpointLocal NighttimeMin	DewpointLocal MorningAvg	DewpointLocal MorningMax	DewpointLocal MorningMin	DewpointLocal AfternoonAvg	DewpointLocal AfternoonMax	Dew fter
2018-09-19	53719:US	43.03095817	-89.51221458	63.875	66	62	63.75	65	62	65.58333333	66	65	62.83333333	63	62	64.66666667	65	
2018-09-20	53719:US	43.03095817	-89.51221458	68.125	71	65	69.41666667	71	66	66.91666667	69	62	68.83333333	70	66	70	71	
2018-09-21	53719:US	43.03095817	-89.51221458	54.95833333	68	45	52.33333333	60	46	44.41666667	47	42	56.16666667	60	53	48.5	52	
2018-09-22	53719:US	43.03095817	-89.51221458	45.83333333	49	42	46.33333333	48	43	48	49	47	45.16666667	47	43	47.5	48	
2018-09-23	53719:US	43.03095817	-89.51221458	52.08333333	56	47	53.16666667	56	47	54.16666667	56	52	51.16666667	54	47	55.16666667	56	
2018-09-24	53719:US	43.03095817	-89.51221458	56.33333333	60	52	56.75	59	52	60.08333333	61	59	55	58	52	58.5	59	
2018-09-25	53719:US	43.03095817	-89.51221458	59.08333333	61	56	58.75	60	56	58	59	56	59.66666667	60	59	57.83333333	60	
2018-09-26	53719:US	43.03095817	-89.51221458	54.29166667	59	49	53.83333333	59	49	48.75	51	46	57	59	55	50.66666667	53	
2018-09-27	53719:US	43.03095817	-89.51221458	46.25	49	43	45.66666667	48	43	45.33333333	46	44	47	48	45	44.33333333	46	
2018-09-28	53719:US	43.03095817	-89.51221458	44.79166667	46	43	44.75	46	43	43.16666667	45	41	45.5	46	43	44	45	
2018-09-29	53719:US	43.03095817	-89.51221458	42.20833333	44	40	42.41666667	44	40	41.16666667	42	40	43.33333333	44	41	41.5	43	
2018-09-30	53719:US	43.03095817	-89.51221458	41.70833333	43	40	41.83333333	43	40	42.66666667	43	42	42.16666667	43	40	41.5	42	
2018-10-01	53719:US	43.03095817	-89.51221458	43.25	45	42	43.58333333	45	42	43.08333333	44	42	44.16666667	45	42	43	44	
2018-10-02	53719:US	43.03095817	-89.51221458	44.29166667	46	42	45	46	43	43.83333333	45	42	45.16666667	46	43	44.83333333	46	

Appendix C: CSV Column Titles

The CSV columns are: date, postalKey, latitude, longitude, followed by the distribution of the requested weather aspects over 7 aggregation periods over 3 aggregation values (Avg, Max, Min). Note: All columns with the time period of 'LocalDay' record a 'day' from midnight to midnight. All other columns represent a 'day' as 7 am to 7 am. There will always be the 1st 5 columns of:

```
date, geoType, geoTypeId, latitude, longitude
```

followed by columns named by the "word product" of: `[Weather Variable] x "Local" x [Day Part Title] x ["Avg" | "Max" | "Min"]`

So, if you only specified productId=Dewpoint, the column titles of the resulting csv (following the 1st 5 above) would be:

```
DewpointLocalDayAvg,        DewpointLocalDayMax,        DewpointLocalDayMin,
DewpointLocalDaytimeAvg,    DewpointLocalDaytimeMax,    DewpointLocalDaytimeMin,
DewpointLocalNighttimeAvg,  DewpointLocalNighttimeMax,  DewpointLocalNighttimeMin,
DewpointLocalMorningAvg,    DewpointLocalMorningMax,    DewpointLocalMorningMin,
DewpointLocalAfternoonAvg,  DewpointLocalAfternoonMax,  DewpointLocalAfternoonMin,
DewpointLocalEveningAvg,    DewpointLocalEveningMax,    DewpointLocalEveningMin,
DewpointLocalOvernightAvg,  DewpointLocalOvernightMax,  DewpointLocalOvernightMin
```